BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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| Application of Pacific Gas and Electric Company (U39E) for Review of Entries to the Energy Resource Recovery Account (ERRA) and Renewables Portfolio Standard Cost Memorandum Account (RPSMA), and Compliance Review of Fuel Procurement for Utility Retained Generation, Administration of Power Purchase Contracts, and Least Cost Dispatch of Electric Generation Resources for the Record Period of January 1, through December 31, 2010 and for Adoption of Electric Revenue Requirements and Rates Associated with the Market Redesign and Technology Upgrade (MRTU) Initiative. | Application No. 11-02-011<br>(Filed February 15, 2011) |

# COMMENTS OF THE OFFICE OF RATEPAYER ADVOCATES ON PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E) WORKSHOP REPORT CONCERNING LEAST COST DISPATCH

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## I. INTRODUCTION

The Office of Ratepayer Advocates (ORA) submits the following comments pursuant to Decision (D.) 13-10-041, the Decision on Compliance Review of Pacific Gas and Electric Company (PG&E) Procurement Activities and Entries to the Energy Resource Recovery Account [ERRA] and Renewables Portfolio Standard Cost Memorandum Account for the Record Period of January 1, Through December 31, 2010. These comments pertain to the February 21, 2014, PG&E Workshop Report Concerning Least Cost Dispatch.

ORA appreciates PG&E's efforts thus far to include more information to meet its burden of proof and better demonstrate that it has met the Commission's least cost dispatch (LCD) standard, as described in Standard of Conduct 4 (SOC4)[1]. ORA understand that this is a collaborative process and recommends that PG&E go further in its efforts to meet this burden and includes in these comments a number of additional metrics that will help it to demonstrate compliance with SOC4. ORA is open to working in close cooperation with PG&E to further refine the metrics to be included in the filing.

ORA also notes, in multiple places, data on market results is requested, and this is important information because it is used by PG&E in planning its operations. For instance, PG&E uses it to determine if there are systematic trends in how CAISO is dispatching its resources and whether a modification of its strategy is necessary in response (e.g. by modifying the self-schedules for a certain resource). As another example, from a regulatory standpoint it is valuable to highlight the potential revenue impact from miscalculating incremental costs of resources.

The following are ORA's initial recommendations to supplement PG&E's suggested measures:

- Overall, annual and monthly metrics should be provided in both tabular and chart forms, and the annual data should include comparisons with previous years.

[1] *See*, D.02-10-062, Conclusion of Law 11.

- Quantitative measures should be included to assess how and when resources are bid or self-scheduled, and with what degree of success (example criteria to include the cost impact of incorrectly calculating bids, frequency that self-schedules were unnecessarily submitted, and correctly dispatching hydro resources when the energy prices are highest).
- Demand Response Resources: ORA has provided a range of metrics that will provide more transparency regarding the dispatch of these resources.
- Additional metrics in areas not included in PG&E's report, for instance benchmarking the accuracy of PG&E's daily forecast, and providing a more direct comparison of the Revenue Requirement included in the ERRA forecast proceeding against the actual spend documented in the ERRA compliance proceeding.

## II. BACKGROUND

In accordance with D.13-10-041, on January 22, 2014, the Commission's Energy Division ("ED") facilitated a workshop for PG&E and other interested parties, including ORA, to develop proposed criteria that can be used to determine what constitutes LCD compliance, and the resulting methodology PG&E should follow to assemble a showing to meet its burden to prove compliance.

D.13-10-041 also required that PG&E "prepare a report summarizing the [workshop] outcome, and file and serve the report in this docket for [the Commission's] consideration."[2] PG&E filed this report on February 21, 2014 and in response ORA files these comments, aimed at ensuring that the methodology PG&E should follow to demonstrate LCD is as robust and transparent as possible.

D.13-01-041 demands a "complete showing of least cost dispatch by PG&E should include precise numerical calculations that either demonstrate that PG&E achieved least cost dispatch during the record period, or quantify the amount of overspending by PG&E."[3]

[2] D.13-10-041, Ordering Paragraph 2.

[3] D.13-10-041 at p. 25.

PG&E's post-workshop report ("PG&E's report") accurately summarizes the utilities' LCD requirements as described in SOC4. In addition, as indicated in the PG&E's report, D.13-10-041 found that the standard to demonstrate compliance with LCD principles is unclear and ordered the aforementioned workshop to provide better guidance to PG&E regarding this standard.[4]

## III. DISCUSSION

### A. Comments on PG&E's Proposed Metrics

According to PG&E's report the utility will include a range of new metrics that will better demonstrate compliance with the LCD standard than the current filing. ORA sets out its comments on these metrics below, organized by resource type.

#### 1. Thermal Resources

##### a) Commitment and Minimum Load Cost Submission

PG&E plans to include "cost calculations supporting commitment cost submissions. Summary report will indicate any exceptions to the calculation documented in work papers, by resource identification (ID) and month, with an estimate of cost impact if any, and actions taken."[5]

This summary table should be provided in different break-downs which should include: daily, monthly and annual versions. The tables should be accompanied by an explanation of how proxy and registered costs are calculated.[6] An explanation should also be included for the reasons, or scenarios, for selecting whether a proxy or registered cost is to be used by CAISO as part of a bid.

The monthly and annual tables should include a summary of:

- The number of times that a proxy value was used and the reason for this method being selected;

[4] D.13-10-041 at p. 21.

[5] PG&E Workshop Report at p. 5.

[6] This should include a detailed explanation of the sources used and how ORA can verify these values.

- The number of times that a registered value was used and the reason for this method being selected;
- The number of times that either a proxy or registered value was calculated incorrectly;
- Summary of the cost impact from any incorrect calculations.

The annual and monthly data should also be provided in chart form, and the annual table items should include comparisons with previous years, to facilitate ORA's evaluation.

**b) Calculation of Bids for Thermal Resources**

PG&E plans to include metrics on the incremental bid cost calculations for thermal resources. Specifically, it will include "a summary report that indicates any exceptions to the incremental cost calculation documented in work papers, by resource ID and month, with an estimate of cost impact if any, and actions taken."[7]

ORA agrees that this is a useful and quantifiable metric. It is important that utilities demonstrate that they have a robust method for verifying that the incremental costs for thermal resources have been calculated accurately. However, it would be helpful for PG&E to expand and clarify the elements noted in the summary report described in the paragraph above. The following items are recommended for inclusion in the LCD filing to support the aforementioned items:

- PG&E should provide a formula in its testimony, with all cost elements clearly defined, to demonstrate how the incremental cost calculation is undertaken for all thermal resource bids.
- PG&E should also provide an in-depth explanation of the sources of information used in the summary report. In particular, it should provide the precise source for the columns in the report (*see* Appendix A for ORA's sample table for this summary report) corresponding to the incremental cost elements: fuel cost, heat rate, greenhouse gas (GHG) cost, operations & maintenance (O&M) cost, and any other cost that is applicable. This explanation should include a description of how the utility can verify that the source data

[7] PG&E Workshop Report at p. 5.

quoted in the table is the actual cost for each specific element for each specific day.[8] For instance, PG&E should demonstrate that the cost quoted for gas for a certain day was in fact the cost of gas for that day. This explanation should also note whether gas hedging costs or any other costs have an impact on costs for that day, and if so, an example of how that effect is calculated and factored into the bid.

Appendix A, Thermal Resource Bid Calculations, includes a sample data table that PG&E can use as a guideline to provide the source information used in calculating their bids. It should provide the following data:

- The source data for each cost element of the incremental bid calculations;
- The calculated bid using the source data;
- The actual bid submitted; and
- The difference between the calculated bid using the source data and the actual bid submitted. Any significant variances should be highlighted.[9]
- Cost impact of any significant difference between the calculated bid using the source data and the actual bid submitted. These cells should indicate whether this calculation error could have affected the market outcome and the loss or gain that resulted due to the error.

This summary table should be provided in daily, monthly and annual formats. The monthly and annual tables should highlight the following data:

- Calculation errors.
- Cost impact of the calculation errors.
- Comparison of both the items above with previous years.

[8] PG&E should also provide an explanation of how they have been able to make this determination or calculation; e.g., in the case of the heat rate when was that measurement/calculation made and does it still apply to the day concerned.

[9] Significant is defined as one cent or more (this is based on the smallest marginal unit cost change possible for a bid submitted to CAISO).

The annual table should also be provided in chart form to facilitate ORA's evaluation. It would also be beneficial to have some additional analysis of the bids themselves including:

- How many times is a resource bid in to the market versus not (and an exception report to explain the times they are not bid in to the CAISO market)?
- Percentage of bids that are submitted both above and below the Locational Marginal Price (LMP).
- Percentage of times when energy was awarded when the bid was lower than the LMP.
- Percentage of times when energy was awarded when the bid was higher than the LMP.
- If energy was not awarded when the bid was lower than the LMP, why was it not accepted? How many times did this situation result in CAISO Customer Inquiry Dispute & Information (CIDI) tickets, how frequently did this happen,[10] and what were the subsequent actions taken by PG&E.

**c) Daily Self-Commitment Decisions**

PG&E proposes to include "a summary report that will indicate any exceptions to the decision process documented in work papers, by resource ID and month, with an estimate of cost impact if any, and actions taken."[11]

This summary table should be provided in different forms: daily, monthly and annual. The daily tables should highlight the following data by resource:

- Reason for self-commitment (PG&E can develop reason codes and provide definitions of these codes);
- Total megawatt-hours (MWh) self-scheduled;
- Net revenue for the day;
- Whether a profit or loss was recorded;

[10] PG&E has noted this subject area will be investigated in its report.

[11] PG&E Workshop Report at p. 5.

- Average hourly daily commitment cost if unit had instead been bid into market;[12]
- Average hourly LMP; and
- Using "back-cast" estimate what would have been the net revenue if the resource was bid into the market on the days self-scheduled.

The monthly and annual tables should include the following data by resource for self-scheduled units:

- How many days that the unit was self-scheduled (the annual table should include a comparison with the previous year);
- Total MWh self-scheduled (the annual table should include a comparison with the previous year);
- Number of days that each resource was in or out of the money (the annual table should include a comparison with the previous year);
- The average hourly unit revenue when the resource was self-scheduled;
- The average hourly unit revenue when the resource was awarded energy in the CAISO market; and
- The total net revenue if the resource were bid into the market on the days it was self-scheduled, using a "back-cast" estimate.

These data should also be provided in chart form to facilitate ORA's evaluation.

**2. Hydro and Pumped Storage Resources**

ORA would like to request the following additional information be provided in table and chart form (for annual and monthly reports) for the times when each hydro resource is dispatched:

- Detailed breakdown of the dates, times and durations of the dispatch of each resource;

[12] The cost should be inclusive of incremental bid and any other commitment costs (e.g. start up and minimum load cost).

- Total MWh dispatched;
- LMP for each hour when the resource dispatched (for the monthly and annual reports, an average hourly LMP);
- A sorted list of LMPs, from highest to lowest, relevant to each resource; and
- A quantifiable measure of how successful PG&E was at dispatching limited use hydro & pumped storage resources when the market clearing prices were at the highest during the year.[13]

PG&E has noted that dispatch of hydro resources involves using opportunity cost bids so it is important to better understand whether these resources are being bid when energy values are at their highest.

### 3. Demand Response Resources

It is important that PG&E provide more transparency regarding how demand response (DR) programs are used. ED's report titled *Lessons Learned From Summer 2012 Southern California Investor Owned Utilities' Demand Response Programs* identified the issue of an increase in peaker plant service hours while DR program events decreased from 2006 to 2012.[14] Conclusion of Law 1 of D.13-07-003 states,

> The Commission should study if, to what extent, and why IOUs are using peaker plants at a much higher rate than Demand Response programs.[15]

PG&E's report focuses on the calculation of bids, which includes only a subset of all DR programs because, currently, only a relatively small proportion of PG&E's DR resources can be bid into the CAISO's day-ahead markets and none into its real-time markets. Although this is a useful metric for PG&E to provide, ORA would like the scope of this report to extend to all DR programs, where relevant. In relation to DR programs that are not bid in competitively, the decision to dispatch these programs (or

[13] This could use some of the data noted above or use other sources.

[14] Staff Report, p.32.

[15] D.13-07-003, p.38.

not) is made entirely by the utility. This decision is made after the program's dispatch trigger condition is reached. The table in Appendix B, Sample Set of Metrics for Demand Response, is aimed at facilitating better reporting on the use of DR programs. The need to increase the transparency of utilities' administration of DR programs, and the benefits of including this sample table, are also discussed in ORA's comments in Phase 1 of R.13-09-011.[16]

As a minimum, the reporting requirement should identify:

- Percentage of all DR program capacity that can be bid into the market.
- When a trigger for a DR program was reached, data detailing the specific trigger and program.
- If a trigger was met, was the DR program dispatched?
- If the DR program was not dispatched, provide a detailed explanation of why not.
- The Locational Marginal Pricing (LMP)
- The highest priced marginal resource within PG&E's portfolio that was dispatched following a trigger event being reached and the DR program being eligible to be called.

This reporting requirement would allow the Commission and ORA to better review the criteria used by utilities in administering these programs.

### B. Additional Metrics Proposed by ORA That Are Not Included in PG&E's Proposal.

There are also a number of actions that were not included in PG&E's report that are important in assessing the utility's demonstration of compliance with the LCD standard. These are:

- The ERRA forecast and ERRA compliance proceedings should be compared to each other more directly. It would be helpful if PG&E includes a comparison of the revenue

[16] *See*, The Office of Ratepayer Advocates' Opening Comments on Proposals for Revisions to Demand Response Program for Bridge Fund Year dated March 3, 2014 in R. 13-09-011, p.6.

requirement that is a forecast to the actual amount spent in the record year under scrutiny.

- A background summary table should be provided that that lays out baseline annual data, including but not limited to the following:
  - Total capacity of the dispatchable portfolio;
  - Total dispatchable capacity lost due to outages;
  - Total capacity of the non-dispatchable portfolio;[17]
  - Total non-dispatchable capacity lost due to outages; and
  - Total energy awards (dispatchable and non-dispatchable) broken down by resource type (hydro, pumped storage, thermal etc.) further broken down by self-scheduled versus market awards.
- Comparison of the accuracy of PG&E's forecast with actual CAISO results. This is a first level indicator of whether utilities should be using their forecast in its operating decisions, such as self-scheduling or calling DR programs. In particular PG&E should include an assessment of how accurate they were on the 100 highest energy value days, and the days when resources were self-committed due to concerns about the CAISO cycling their resources in an un-economic manner.
- An assessment of hedging costs and convergence bids costs, and how those are factored into the incremental bids.
- Load bidding: data to support the reason that load tends to be bid mostly into the Day Ahead Market versus the Real Time market.

[17] PG&E should also confirm that the combined dispatchable and non-dispatchable resource capacity represents the entire portfolio capacity.

## IV. CONCLUSION

ORA respectfully requests that the Commission consider ORA's comments in adopting modifications to the evaluation of the LCD standard for 2014 record period on an ongoing basis.

Respectfully submitted,

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# Appendix A: Thermal Resources Bid Calculations

## Sample Table

| | Fuel cost | Source and date of fuel cost calculation | Heat rate | Source and date of heat rate calculation | GHG cost | Source and date of GHG cost calculation | O&M cost | Incremental cost bid | Actual Bid | Difference between actual bid and incremental calculation | Cost impact of calculation error |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Day 1 | | | | | | | | | | | |
| Day 2 | | | | | | | | | | | |

## Appendix B: Sample Set of Metrics for Demand Response

(continued over the page)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Date trigger Is met | Time trigger Is et | Program or contract name(1) | Lead time for notification | Date & time when program is eligible to be implemented | Specify the type of trigger conditions met (2) | Was resource dispatched when available - see column 5 (Y/N)? | If no, explain the reason why not (3) | Forecasted availability of the program or contract, MWh | Actual MWh dispatched of the program contract |

(1) If the same trigger applies to multiple programs or contracts, each program or contract should be reported on a separate row

(2) Specify the exact market price trigger, heat rate trigger, temperature trigger, system load trigger and/or other trigger and how it was met. For example, "the trigger is a temperature above 95 degrees F, and we hit 98 degrees F" or an explanation with similar detail.

(3) Provide enough explanation that shows the reasoning for not dispatching the program.

(4) Provide explanation on any tariff-based constraints preventing dispatch. For example, does the resource have a limited number of dispatches per unit of time (season, month, other)? If so, how many dispatches have already occurred, and how many remain to be called?

(5) Provide explanation on any internal strategy based constraints preventing dispatch. For example, a preference not to call on weekends or day-of, or preference to only dispatch 1/3 of the resource at a time, or preference for shorter duration.

(6) Input the most relevant forecast and actual price based on lead time for notification and specify what the "most relevant price" for comparison is. This may be the same as the day-ahead information for a day-ahead program or it could be hours ahead information for day-of programs.

| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 21 |
|---|---|---|---|---|---|---|---|---|
| Duration of dispatch (hours) | Tariff-based constraints restricting availability (4) | Strategy-based constraints preventing dispatch (5) | Highest price that a non-DR resource which is part of the utilities' portfolio was *forecast* to be dispatched | Highest price that a non-DR resource that is part of the utilities' portfolio was *actually* dispatched | Was the resource noted in column 15 self scheduled? | Please note all non-DR resources that are part of the utilities' portfolio that are forecast to have marginal commitment costs that are above the energy value of the DR program resource at the time they are available (i.e. column 5) | Forecast of most relevant locational marginal price (6) | Actual most relevant locational marginal price from CAISO (6) |

(1) If the same trigger applies to multiple programs or contracts, each program or contract should be reported on a separate row

(2) Specify the exact market price trigger, heat rate trigger, temperature trigger, system load trigger and/or other trigger and how it was met. For example, "the trigger is a temperature above 95 degrees F, and we hit 98 degrees F" or an explanation with similar detail.

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(6) Input the most relevant forecast and actual price based on lead time for notification and specify what the "most relevant price" for comparison is. This may be the same as the day-ahead information for a day-ahead program or it could be hours ahead information for day-of programs.